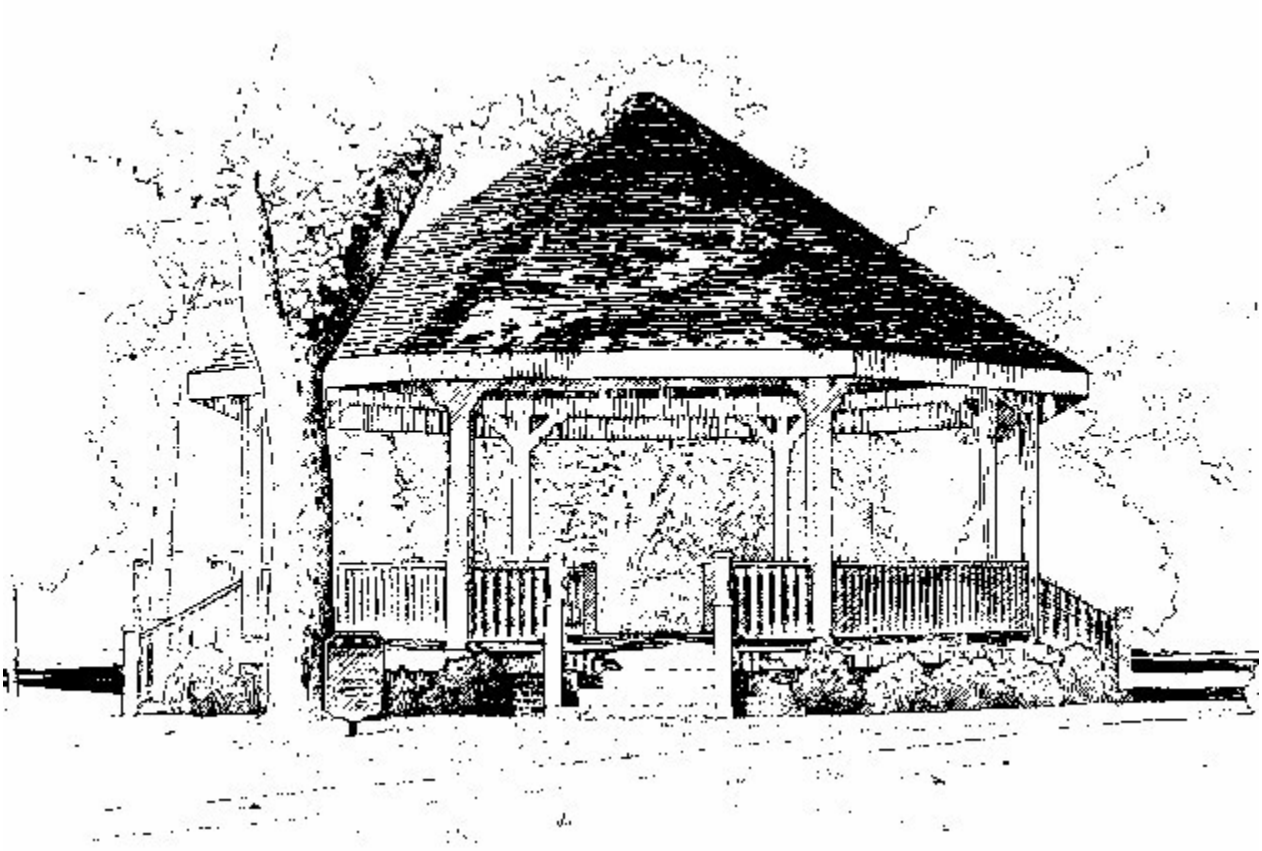
ANNUAL DRINKING WATER QUALITY REPORT FOR CARLISLE BARRACKS, PENNSYLVANIA JANUARY 1, 2003 TO DECEMBER 31, 2003



PREPARED BY

ENGINEERING AND ENVIRONMENTAL DIVISION
DIRECTORATE OF PUBLIC WORKS

MAY 2004

Annual Drinking Water Quality Report
for Carlisle Barracks, PA

We are pleased to present to you this year's ***Annual Drinking Water Quality Report for 2003.*** This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water source is Letort Spring located at Building 830 adjacent Patton Road. The source of water for our spring is the Saint Paul Group aquifer.

If you have any questions about this report or concerning your water utility, please contact Mr. Keith Bailey at 245-3612. We want our valued customers to be informed about their water utility.

The U.S. Army Garrison, Directorate of Public Works, routinely monitors for constituents in your drinking water according to federal and state laws. The table below shows the results of our monitoring for the period of January 1 to December 31, 2003**.** All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk. As you can see from the table below, our system had one violation due to a missed third quarter sampling. This occurred when the contracted laboratory services failed to sample for Nitrate. Sampling was accomplished as soon as Carlisle Barracks was informed of the mistake. Please see the attachment at end of the report for more details. **Carlisle Barracks is proud that our drinking water meets or exceeds all Federal and State requirements.**

In this table, you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the contaminant is not present at a detectable level.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level (AL) – The concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements which a water system must follow.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal -The "Goal"(MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

TEST RESULTS

Microbiological Contaminants

Contaminant (Unit of measurement)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
1. Total Coliform Bacteria	N	0.0		0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal coliform and *E.coli*	N	0.0		0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive	Human and animal fecal waste

Radioactive Contaminants

Contaminant (Unit of measurement)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
3. Alpha emitters (pCi/1)	N	ND	a	0	15	Erosion of natural deposits

Inorganic Contaminants

Contaminant (Unit of measurement)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
4. Antimony (ppb)	N	ND	b	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
5. Arsenic (ppb)	N	ND	b	n/a	50	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
6. Barium (ppm)	N	.0114	b	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
7. Beryllium (ppb)	N	ND	b	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
8. Cadmium (ppb)	N	ND	b	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
9. Chromium (ppb)	N	ND	b	100	100	Discharge from steel and pulp mills; erosion of natural deposits
10. Copper (ppm)	N	0.52	f	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
11. Cyanide (ppb)	N	ND	b	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories

12. Fluoride (ppm)	N	0.8	b	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
13. Lead (ppb)	N	ND	f	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
14. Mercury (inorganic) (ppb)	N	ND	b	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
15. Nitrate (as Nitrogen) (ppm)	N	4.73	4.36-4.73 See footnote (c)	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
16. Selenium (ppb)	N	ND	b	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
17. Thallium (ppb)	N	ND	b	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Synthetic Organic Contaminants including Pesticides and Herbicides						
Contaminant (Unit of measurement)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
18. Alachlor (ppb)	N	ND	d	0	2	Runoff from herbicide used on row crops
19 Metribuzin (ppb)	N	ND	d			Herbicide runoff **Unregulated**
20. Metolachlor (ppb)	N	0.83	d			Herbicide runoff **Unregulated**
21. Simazine (ppb)	N	ND	d	4	4	Herbicide runoff
Volatile Organic Contaminants						
Contaminant (Unit of measurement)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
22. Benzene (ppb)	N	ND	e	0	5	Discharge from factories; leaching from gas storage tanks and landfills
23. Carbon tetrachloride (ppb)	N	ND	e	0	5	Discharge from chemical plants and other industrial activities
24. Chlorobenzene (ppb)	N	ND	e	100	100	Discharge from chemical and agricultural chemical factories
25. o-Dichlorobenzene (ppb)	N	ND	e	600	600	Discharge from industrial chemical factories
26. p-Dichlorobenzene (ppb)	N	ND	e	75	75	Discharge from industrial chemical factories
27. 1,2 – Dichloroethane (ppb)	N	ND	e	0	5	Discharge from industrial chemical factories
28. 1,1 – Dichloroethylene (ppb)	N	ND	e	7	7	Discharge from industrial chemical factories
29. cis-1,2-Dichloroethylene (ppb)	N	ND	e	70	70	Discharge from industrial chemical factories
30. trans - 1,2 – Dichloroethylene (ppb)	N	ND	e	100	100	Discharge from industrial chemical factories
31. 1,2-Dichloropropane (ppb)	N	ND	e	0	5	Discharge from industrial chemical factories
32. Ethylbenzene (ppb)	N	ND	e	700	700	Discharge from petroleum refineries
33. Styrene (ppb)	N	ND	e	100	100	Discharge from rubber and plastic factories; leaching from landfills
34. Tetrachloroethylene (ppb)	N	0.5	e	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners

35. 1,2,4 – Trichlorobenzene (ppb)	N	ND	e	70	70	Discharge from textile-finishing factories
36. 1,1,1 – Trichloroethane (ppb)	N	ND	e	200	200	Discharge from metal degreasing sites and other factories
37. 1,1,2 –Trichloroethane (ppb)	N	ND	e	3	5	Discharge from industrial chemical factories
38. Trichloroethylene (ppb)	N	ND	e	0	5	Discharge from metal degreasing sites and other factories
39. TTHM [Total trihalomethanes] (ppb)	N	0.021	e-g	0	100	By-product of drinking water chlorination
40. Toluene (ppm)	N	ND	e	1	1	Discharge from petroleum factories
41. Vinyl Chloride (ppb)	N	ND	e	0	2	Leaching from PVC piping; discharge from plastics factories
42. Xylenes (ppm)	N	ND	e	10	10	Discharge from petroleum factories; discharge from chemical factories

Footnotes:

(a) Sample collected 11-14-2003

(b) Sample collected 12-19-2002

(c) Carlisle Barracks failed to take 3rd Quarter sampling for 03. This is a Tier 3 Violation. Sample was taken as soon as violation was noted and PA DEP was notified. **(see Public Notice attachment at end of report)**

(d) Sample collected 05-08-2003 Sampling for item 18,19 and 20 not required for 2003

(e) Sample collected 03-06-2003

(f) Sample Not required in 2003

(g) Chloroform was the only THM detected.

Microbiological Contaminants:

(1) Total Coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

(2) Fecal coliform/E.Coli. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

Radioactive Contaminants:

(3) Alpha emitters. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

(4) Antimony. Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

(5) Arsenic. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

(6) Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

(7) Beryllium. Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

(8) Cadmium. Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

(9) Chromium. Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

(10) Copper. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who

drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
(11) Cyanide. Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
(12) Fluoride. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.
(13) Lead. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
(14) Mercury (inorganic). Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
(15) Nitrate. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.
(16) Selenium. Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
(17) Thallium. Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

Synthetic organic contaminants including pesticides and herbicides:
(18) Alachlor. Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
(19) Metribuzin Not Regulated.
(20) Metolachlor Not Regulated.
(21) Simazine. Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

Volatile Organic Contaminants:
(22) Benzene. Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
(23) Carbon Tetrachloride. Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
(24) Chlorobenzene. Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
(25) o-Dichlorobenzene. Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
(26) p-Dichlorobenzene. Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
(27) 1,2-Dichloroethane. Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
(28) 1,1-Dichloroethylene. Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
(29) cis-1,2-Dichloroethylene. Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
(30) trans-1,2-Dicholoroethylene. Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
(31) 1,2-Dichloropropane. Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
(32) Ethylbenzene. Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
(33) Styrene. Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
(34) Tetrachloroethylene. Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
(35) 1,2,4-Trichlorobenzene. Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
(36) 1,1,1,-Trichloroethane. Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL

over many years could experience problems with their liver, nervous system, or circulatory system.
(37) 1,1,2-Trichloroethane. Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
(38) Trichloroethylene. Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
(39) TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
(40) Toluene. Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
(41) Vinyl Chloride. Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
(42) Xylenes. Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

All sources of drinking water are subject to potential contamination by constants that are naturally occurring or man made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCL's are set at very stringent levels for health effects. To understand the possible health effects described for many regulated constituents, a person would have to drink two liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

We at U.S. Army Garrison, Directorate of Public Works, are proud to provide you with top quality water. We ask that all our customers help us protect our water sources. If you have any questions regarding this report, please contact Mr. Keith Bailey, Biological Science Technician, 245-3612.

ATTACHMENT (PUBLIC NOTICE)

Monitoring Requirements Not Met for U.S Army Garrison (Carlisle Barracks)

Our water system violated drinking water regulations over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct this violation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the time period of 07/01/2003 to 09/30/2003 we did not test for the contaminants listed in the table below, and therefore, cannot be sure of the quality of our drinking water during that time.

What Should You Do?

There is nothing you need to do at this time.

The table below lists the contaminants we did not properly test for during the last year; how often we are supposed to sample for this contaminants and how many samples we are supposed to take; how many samples we took; when samples should have been taken; and the date on which follow-up samples were taken.

Contaminant(s)	Required sample frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
NITRATE	**Each Calendar Quarter**	**None Taken in 3rd Quarter**	**Each Calendar Quarter**	**Sample was taken 10/30/03**

What Happened?

Contracted Laboratory (Analytical Laboratory Services) Missed sampling the Nitrate for the 3rd Quarter Sampling.

What was done?

As soon as Carlisle Barrack Environmental Office discovered the missed test, Analytical Laboratory Services and the Pennsylvania Department of Environmental Protection (PADEP) were notified and a make up test was then taken.

For more information, please contact (Keith Bailey) Carlisle Barracks Environmental Office at 717-245-3612

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by U.S. Army Garrison (Carlisle Barracks Environmental Office)

PWS ID#: 7210010 Date Distributed or Posted: May 2004 CCR